

ABSTRACT

Large Volume Gamma Spectroscopy

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As part of the Environmental Restoration Project at Sandia some landfills are undergoing remediation. As material is removed from a landfill, it is visually inspected for large items, which are placed aside. The remaining fill is then sifted through an apparatus that removes smaller items and rocks. What is left is a large volume of relatively homogeneous soil free of debris. A method was needed to assay all of this soil for general radioactive contamination. This paper will present the process by which the method evolved and detail some of the technical difficulties and how they were overcome. Specifically:

- What was the primary radiological concern in the soil?
- How can we radiologically assay for that concern?
- How can we analyze a large volume of soil efficiently?

A gamma spectroscopy system similar to those for *in-situ* soil measurements was devised. This paper will describe the equipment used to quickly assay ten cubic yard lots of soil at a time. It will describe the detector efficiency calibration, which is believed to be a unique application. It will describe other methods which might have been used and list some of the advantages of the method in use.

This work was supported by the United States Department of energy under contract DE-ACO4-94AL85000. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the US DOE.